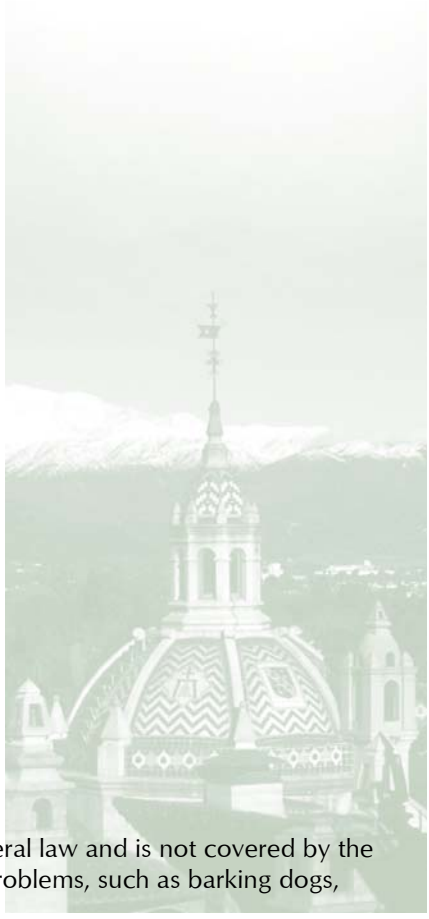
Noise Element

The philosopher Arthur Schopenhauer once remarked: "Noise is the most impertinent of all forms of interruption. It is not only an interruption, but a disruption of thought."[1] While Schopenhauer is known largely for his pessimistic worldview, his comment reflects a common feeling among people accustomed to living in a relatively quiet environment. Noise affects how we think. It affects how we respond to and perceive the quality of the places in which we live, work and play. For these reasons, noise requires careful consideration in the community planning process.

The Noise Element examines noise sources in the City with a view toward identifying and appraising the potential for noise conflicts and problems and identifies ways to reduce existing and potential noise impacts. In particular, the Noise Element contains policies and programs to achieve and maintain noise levels compatible with various types of land uses. The element addresses noise which affects the community at large, rather than noise associated with site-specific conditions.[2] However, the programs in this element do address effective strategies to reduce and limit community exposure to loud noise sources. On the other hand, the City's Noise Control Code (Title 7) prohibits such noise generated within the City and attempts to minimize noise levels and mitigate the effects of noise to provide a safe and healthy living environment.

Scope and Content of the Noise Element

The State of California, in recognition of the relationship between noise and noise-sensitive uses and the public health concerns associated with noise, has adopted very specific guidelines for Noise Elements in both the Government Code (Section 65302[f]) and the Health and Safety Code (Section 56050.1). These guidelines include a requirement for defining projected future noise conditions in the form of noise exposure contours, which present information in a manner similar to topographic map contours. This noise information serves as the basis for developing guidelines for identifying compatible land uses,



[1] Arthur Schopenhauer. *Studies in Pessimism*. 1851.

[2] Workplace noise affecting individuals is regulated by State and Federal law and is not covered by the General Plan. Similarly, the Noise Element does not address isolated noise problems, such as barking dogs, leaf blowers or loud stereos.

identifying the proper distribution of land uses on the General Plan Land Use Policy Map and establishing appropriate development standards.

Toward these ends, this Noise Element includes the following sections:

- Understanding Noise and How It Affects Us
- Sources of Noise in Riverside
- Future Noise Conditions
- Minimizing Noise Impacts

As noted in the Introduction to this General Plan, several Federal, State and local agencies have adopted legislation and plans intended to minimize exposure of people to loud noise sources. These include:

See the Introduction under "California Noise Insulation Standards (Title 24) for more information on this topic.

- California Noise Insulation Standards (Title 24 of the Health and Safety Code)
- City of Riverside Noise Control Code (Title 7 of the Municipal Code)
- Riverside Municipal Airport Master Plan
- March Air Reserve Base AICUZ Study
- March Joint Powers Authority General Plan
- Riverside County Airport Land Use Compatibility Plan

RELATIONSHIP TO OTHER PLAN ELEMENTS

As noted above, policies and plans in the Noise Element work in tandem with the other elements to protect existing and planned land uses from significant noise impacts. Most importantly, the Land Use and Urban Design Element establishes land use patterns that respond to noise conditions, particularly noise associated with industrial areas, the freeways, the many rail lines that traverse the community and Riverside Municipal Airport, Flabob Airport and March Air Reserve Base/March Inland Port. The noise contours for year 2025 will reflect planned roadway configurations and anticipated traffic volumes identified the Circulation and Community Mobility Element, as traffic noise contributes significantly to high noise levels.

UNDERSTANDING NOISE AND HOW IT AFFECTS US

Noise often is defined as annoying or unwanted sound. Health studies have shown that excessive noise can cause adverse psychological or physiological effects on human beings.

Defining noise problems and establishing a regulatory scheme to deal with noise that is both fair and effective requires an understanding of some of the basic characteristics of sound and how it affects people and their activities. Some of the most important characteristics are outlined in Table N-1 (Characteristics of Noise). The figure also provides general comments about how these characteristics affect people. Table N-2 (Noise Levels for Common Noise Sources) describes common noise sources for indoor and outdoor peak noise levels.

While sound levels can be easily measured, the variability in subjective and physical responses to sound complicates the analysis of its impact on people. Sound is created when an object vibrates and radiates part of its energy as acoustic pressure waves through a medium such as air, water or a solid. The ear, the hearing mechanism of humans and most animals, receives these sound pressure waves and converts them to neurological impulses which are transmitted to the brain for interpretation. The interpretation by the auditory system and the brain depends on the characteristics of the sound and on the characteristics of the person hearing it.

Scientists and engineers use two parameters to technically describe the sound environment at any instant in time: amplitude (or sound power) and frequency (or pitch). These two characteristics affect the way people respond to sound.

Amplitude of a sound is a measure of the pressure or force that a sound can exert. Subjectively, we say a sound is louder if it has a greater amplitude than another sound. Thus, the amplitude of sounds can be described either in measurable magnitude or in relative terms of loudness.

Physically, sound pressure is measured in units of decibels (dB). The sound pressure scale is based on the ratio of the sound energy to a reference pressure which is approximately the least sound pressure that people can perceive. Zero dB means the lowest level normally audible, but does not mean zero sound pressure.

Frequency of a sound is expressed in units of cycles per second or Hertz (Hz), referring to the number of times per second the acoustic pressure wave peaks. Subjectively, a sound that has more cycles per second than another is higher pitched. The human hearing system is not equally sensitive to sound at all frequencies and is most sensitive to sounds in the frequency range of human speech, from four hundred to two thousand cycles per second. The most sensitive people can hear sounds ranging from a little below twenty Hz to somewhat above

TABLE N-1
CHARACTERISTICS OF NOISE

Noise Characteristic	What Is Measured and Units of Measurements	Effects on People and Human Activities
Loudness or Sound Pressure	Energy content of sound waves in the air. Unweighted sound pressure level in decibels (dB).	Noise distracts attention from tasks, interferes with verbal communication and prevents or disturbs sleep. At high levels or for long periods, noise causes temporary or permanent hearing loss. At very high levels, noise causes pain. Louder sounds have greater effects, subject to the further considerations below.
Frequency of Pitch	Frequency (cycles per second, or Hertz (Hz) of pressure waves. Frequency distribution by octave or 1/3 octave band. Overall sound pressure level weighted by frequency, such as A-weighting (dB(A)).	The human ear is most sensitive to sounds in the range of human speech, less sensitive to high or low frequencies at the same sound energy.
Tonal content	Pure tones or energy distribution by octave or 1/3 octave frequency band. Special weightings such as Effective Perceived Noise Level in decibels (EPNDB), or simple penalty weightings for pure tones.	High tonal content means identifiable whines or hums, which can be particularly annoying compared to random noise of the same sound energy.
Information content (music, voice, sirens, etc.)	Judgment that sound includes voice, music, etc. No standard measurement scheme or weighting.	Information content draws attention to sounds compared to more random noise of the same sound energy.
Impact noise	Rapid increase in sound pressure or repetitive impacts. Fast response on sound meters used to measure impact noise.	Impact noise (helicopter rotor blade noise, jackhammers, etc.) can be more annoying than other noises of the same sound energy.
Duration of noise events as percentage of 24-hour or other period.	Hourly or other time-averaged energy level (L_{eq}) or statistical sound levels identifying the level exceeded a given percentage of the time (L_{10}, L_{50}).	A noise which lasts longer or is constant has more impact than one of the same sound energy that occurs only occasionally or for a short period of time.
Degree of intrusion of noise events over background noise levels	Difference between peak and ambient noise levels. Statistical sound levels, peak noise levels compared to average or ambient.	Individual distinct noise events such as aircraft overflights or loud vehicle pass-by events of a given noise level are more intrusive if they occur in a quiet environment.
Time of day	24-hour or annual average level with weightings for evening and night noise such as CNEL or L_{dn}.	People and their activities are generally more sensitive to noise during the nighttime hours because (1) background noise is generally lower, making noise of a given noise level more intrusive and (2) sleep is easily interrupted by noise.
Importance of noise source	Judgment of social value of noise source.	People are generally willing to accept more disturbance from noise they consider necessary, such as from trash collection, emergency vehicle sirens, police helicopters, etc.

Source: Noise Existing Conditions Report, Cotton/Bridges/Associates, 2004.

TABLE N-2
NOISE LEVELS FOR COMMON NOISE SOURCES

Peak Noise Level (dB(A)	Common Indoor Noise Sources	Common Outdoor Noise Sources
Greater than 110	Rock Band	
105-110		
100-105		Military jet flyover at 1,000 feet
95-100	Inside subway train	Gas lawn mower at 3 feet
90-95		Diesel truck at 50 feet
85-90	Food blender at 3 feet	Trash truck load/compact cycle at 50 feet
80-85	Garbage disposal at 3 feet	Noisy urban daytime
75-80	Shouting at 3 feet	
70-75	Vacuum cleaner at 10 feet Inside automobile on freeway	Gas lawn mower at 100 feet Car accelerating at 50 feet
65-70	Normal speech at 3 feet	Commercial area
60-65		Heavy traffic at 300 feet
55-60	Large business office	Dogs barking at 150 feet
50-55	Dishwasher in next room	Birds singing at 150 feet
45-50	Small theater, conference room (background noise level)	Quiet urban daytime
40-45	Small theater, conference room (background noise level)	
35-40		Quiet urban nighttime
30-35	Library	
25-30	Bedroom at night, ventilation off Concert hall (background noise level)	Quiet rural nighttime
20-25		
15-20	Broadcast and recording studio (background noise level)	
10-15		
5-10		
0-5	Threshold of hearing	

Source: Caltrans Noise Manual, March, 1980, p. 1-1-4, supplemented by Cotton/Bridges/Associates from noise monitoring data for various projects.

twenty thousand Hz. As people age, their sensitivity to high frequencies tends to fall. Acoustical energy at frequencies above the range of human hearing is referred to as ultrasonic, or ultrasound. At frequencies below the range of human hearing, acoustical energy is referred to as infrasonic, or infrasound and is experienced as vibration.

Noise-Sensitive Land Uses. The term "noise-sensitive land uses" refers to land uses that are particularly sensitive to noise at levels commonly found in the urban environment. This category includes residential uses, schools, hospitals, churches, outdoor speculative sports facilities, performing arts facilities and hotels and motels.

SOURCES OF NOISE IN RIVERSIDE

TRANSPORTATION RELATED NOISE

Transportation activity represents the principal ambient noise source in Riverside. These sources include:

- Traffic on major arterial roadways within the City
- Traffic on the SR-91, SR-60 and I-215 freeways
- Train movement on the railroad lines
- Flight activity associated with Riverside Municipal Airport, Flabob Airport and March Air Reserve Base/March Inland Port

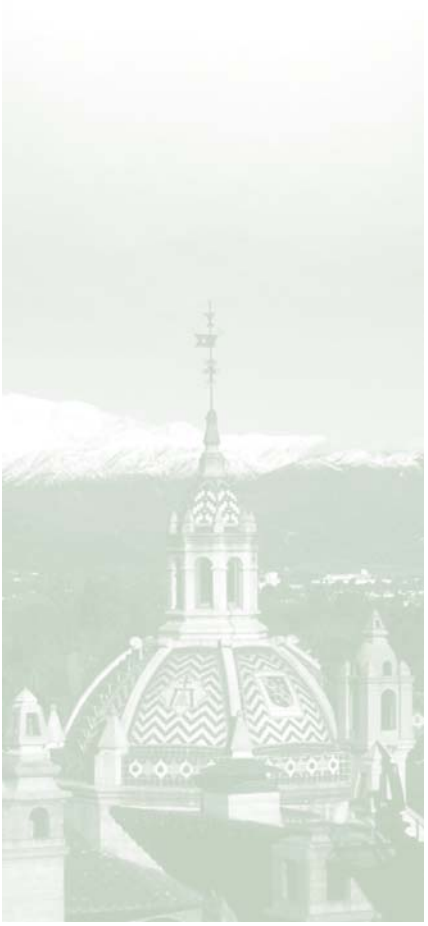
Local Roadway Traffic Noise

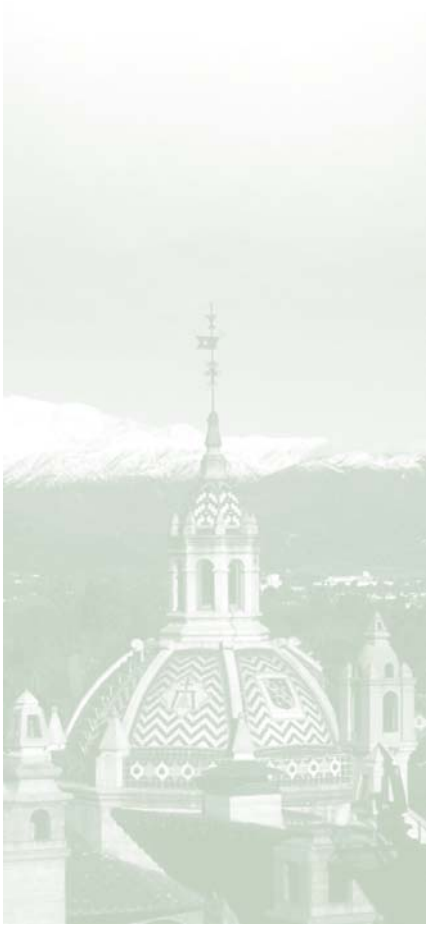
During peak travel hours, heavy traffic on Riverside's streets causes higher noise levels compared to noise levels during non-peak hours. The most heavily traveled roadways include Van Buren Boulevard, Alessandro Boulevard, Arlington Avenue, Tyler Street, La Sierra Avenue, Magnolia Avenue, University Avenue, and Martin Luther King Boulevard, among others. These roadways have been designed specifically to carry large volumes, although long-established land use patterns have placed residential uses along some portions of these streets. Other areas where residential neighborhoods are exposed to traffic noise include the Downtown and University of California, Riverside areas, as shown on Figure N-1 (2004 Roadway Noise).

Freeway Noise

Freeways are a major noise source in many jurisdictions. As shown on Figure N-2 (2004 Freeway Noise), noise contours for the 60 CNEL can extend as far as 3,500 feet from the I-215 Freeway east of the SR-91/I-215 interchange. More modern freeway design and construction

Figure N-1 2004 Roadway Noise





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projects integrate sound walls, such as the significant sound walls and depressed configuration of I-210 through eastern Los Angeles and western San Bernardino counties and the I-5 widening through Orange County. To address freeway noise along long-established routes, the California Department of Transportation (Caltrans) has a priority program and a policy to put sound walls adjacent to residential properties. If a jurisdiction wishes to mitigate freeway noise before scheduled and funded Caltrans improvements are planned, that jurisdiction can fund sound walls or other mitigating elements, with Caltrans later providing reimbursement in accordance with its priority plan.

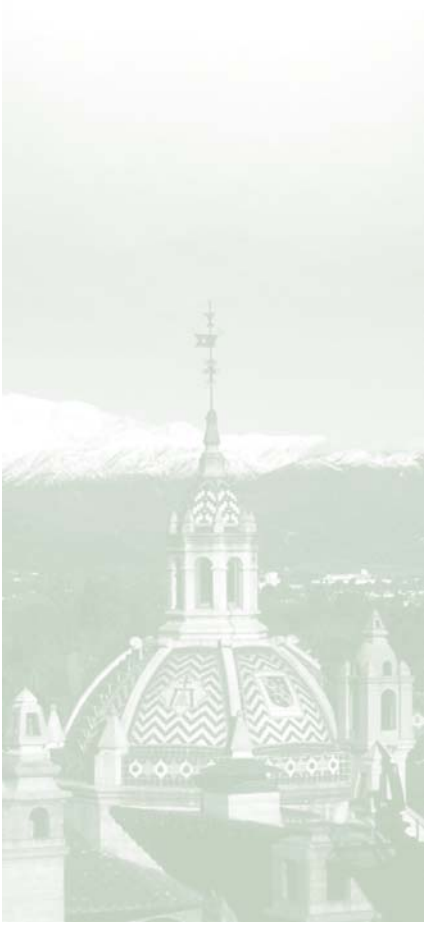
Riverside is traversed by the SR-91, SR-60 and I-215 freeways. Improvements to SR-91 that began in 1998 resulted in significant new sound walls and some relief from the noise associated with increasing regional traffic volumes.

Although sound walls will reduce noise impacts, freeway noise will remain an issue for noise-sensitive land uses, particularly residential development.

Railroad Noise

Both the Union Pacific Railroad (UPRR) and the Burlington Northern Santa Fe Railroad (BNSF) operate rail lines that traverse Riverside, each carrying passenger and freight trains. Train noise, however intermittent, is a significant source of noise due to its magnitude and the associated vibration effects. Train noise incorporates the sounds of the locomotive engine, wheel-on-rail noise and train whistles near at-grade roadway crossings, as shown in Figure N-3, 2004 Railway Noise.

Riverside residents living near rail lines have cited the loud, long train whistles as particularly irksome. State law and the Federal Railroad Administration's code of operating rules and regulations require locomotive engines to sound the train's horn one-quarter mile in advance of the crossing and to continue to sound the horn until the train arrives at the crossing. If a train horn is to be an effective warning device for motorists, it must provide a sound level capable of initiating a response from the driver as the train approaches the crossing. Unfortunately, the sound level required to achieve that response and the location of the train relative to the crossing creates a significant, bothersome noise.



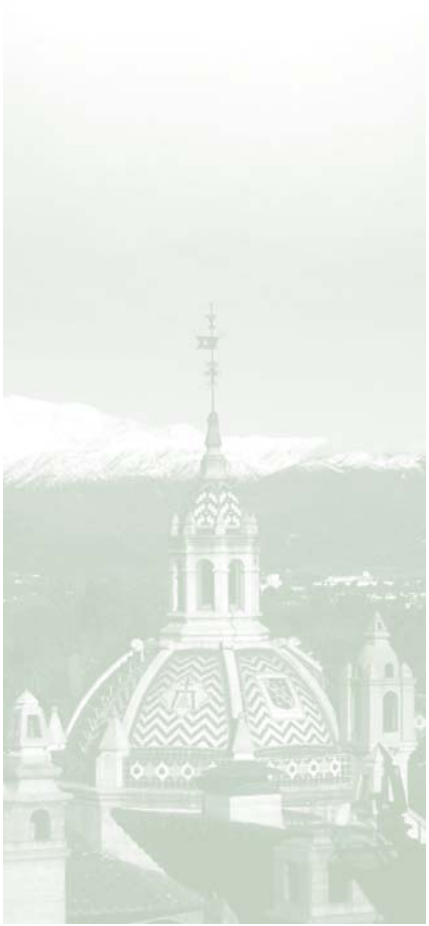


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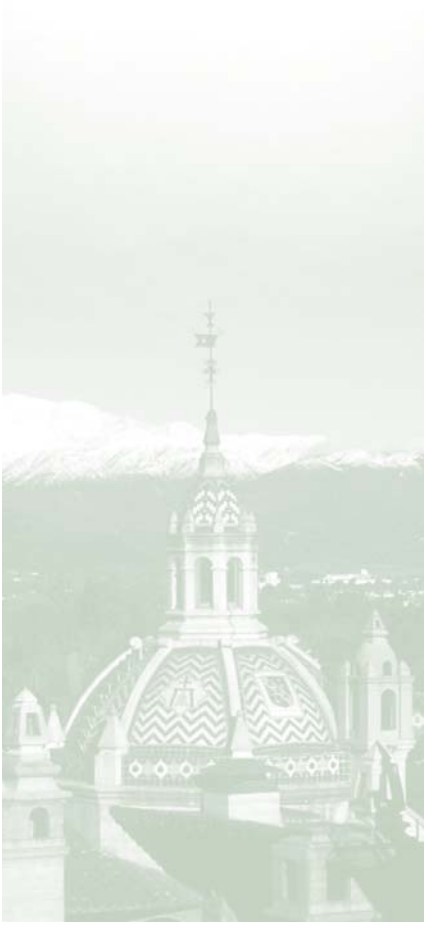
Figure N–2, 2004 Freeway Noise



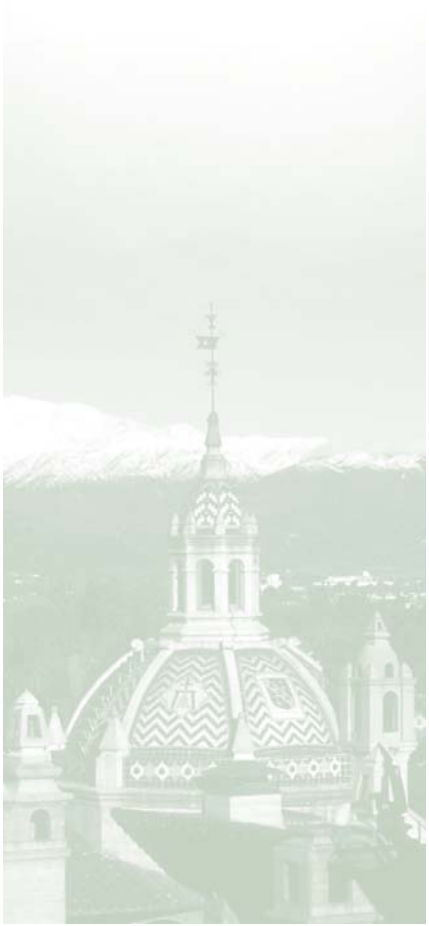


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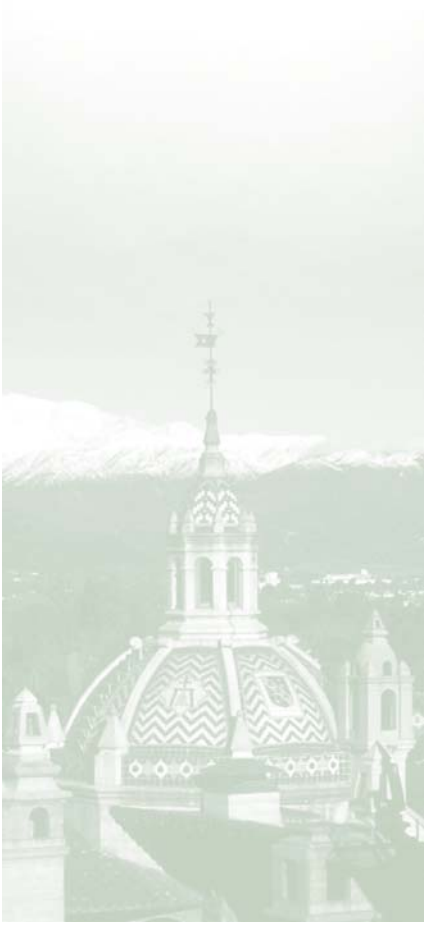
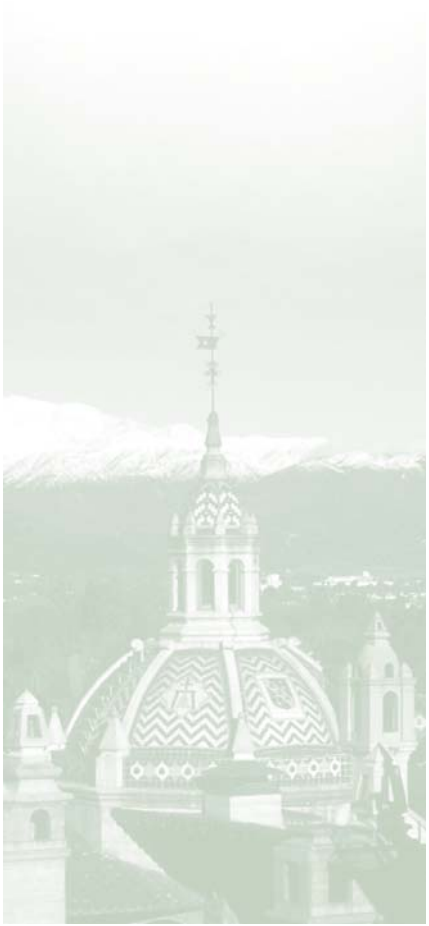
Figure N–3, 2004 Railway Noise





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An effective alternative to train horns has been developed. The automated horn system is a stationary horn activated by the railroad-highway grade crossing system. It is mounted at the crossing, rather than on the train, to deliver a longer, louder and more consistent audible warning to motorists and pedestrians while eliminating noise pollution in neighborhoods for more than a half a mile along the rail corridor. As of 2004, the City has installed this so-called "horn on a stick" device at six railroad crossings in the City. The streets of these railroad crossings include Streeter Avenue, Palm Avenue, Brockton Avenue, Magnolia Avenue, Riverside Avenue and Panorama Road.

The two noise diagrams in Figure N-4 (Train Horn Comparison) depict the area impacted by the sound of a train horn versus an automated horn system. The comparison shows a dramatic difference between the areas impacted at specific decibel levels. Figure N-4 illustrates that the area impacted by the automated horn system is a fraction of the size of the 80 decibel contour produced by the train horn.

Airport Noise

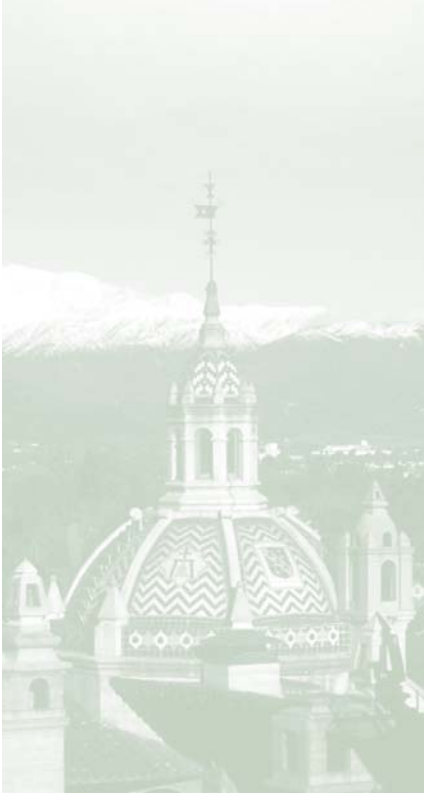
Only one air facility is located within the Planning Area, but operations at two other air facilities just outside City and Planning Area boundaries have local impacts.

Refer to the Land Use and Urban Design Element for a policy that adds an Airport Protection Overlay Zone to the City's zoning map.

Riverside Municipal Airport, a general aviation airport, supports one hundred thousand annual flight operations, including corporate jet activity. The airport covers a total of four hundred fifty-one acres and includes two runways. This is the only air facility located within the Planning Area.

Flabob Airport, a privately operated, primarily recreation-oriented airport, is located just north of the Planning Area across the Santa Ana River in the unincorporated community of Rubidoux.

March Air Reserve Base/March Inland Port, or MARB/MIP, is home to the 452nd Air Mobility Wing of the U.S. Air Force and will expand operations to include the March Inland Port during the early 21st century. Military and civilian aircraft utilizing MARB/MIP produce substantial levels of noise over the southeastern portion of the City and planning area. Plans call for up to twenty-one thousand civilian annual operations and over forty thousand military aircraft annual operations by the year 2010. Although MARB/MIP is located outside of the City and its sphere of influence, noise from the facility will affect both the City and the sphere.



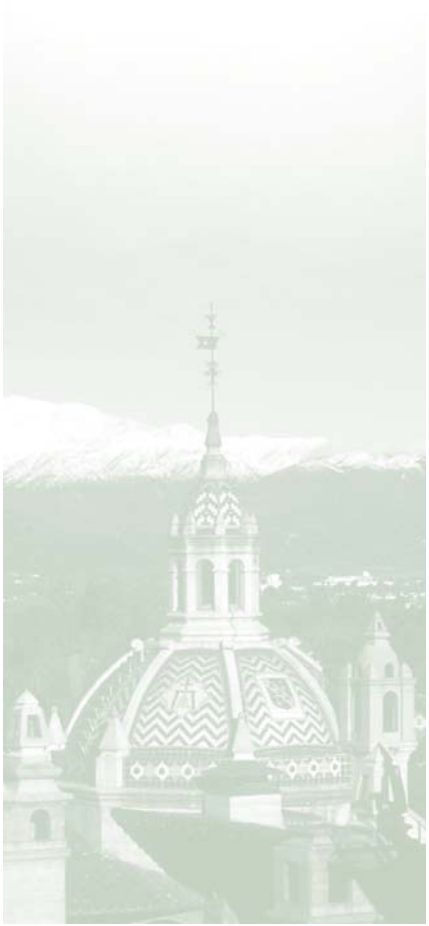


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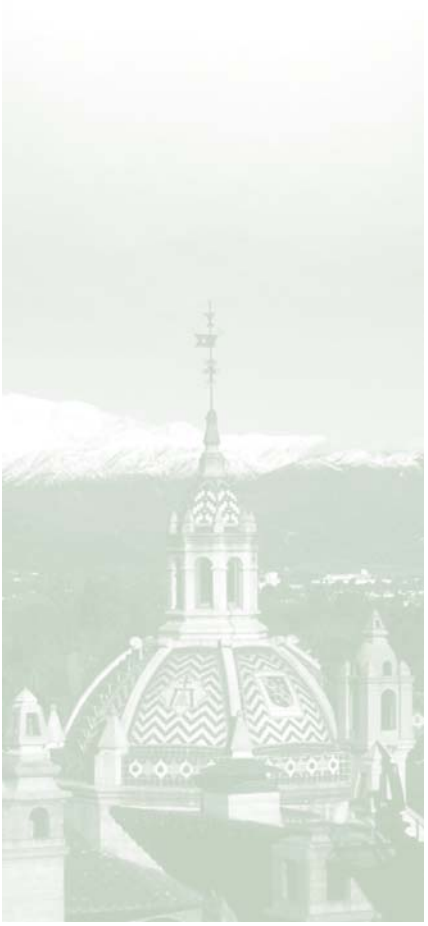
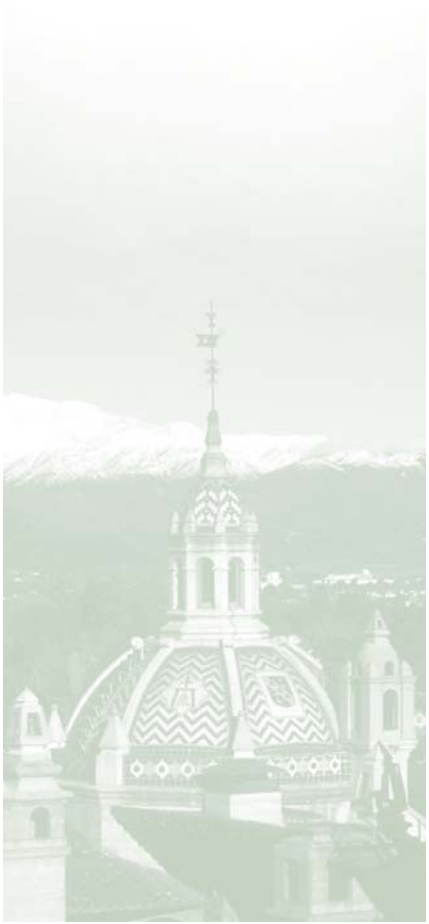
Figure N-4 Train Horn Comparison





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The City has worked as part of the March Joint Powers Authority to adjust air traffic patterns into and out of the MARB/MIP. Efforts have been made to minimize exposure of sensitive land uses to excessive noise in the busy airspace of Ontario and Los Angeles International Airports. Additionally, topographic conditions surrounding MARB/MIP also constrain flight patterns. Established patterns associated with MARB/MIP are anticipated to continue into the future, resulting in ongoing noise levels.

The Public Safety and Land Use Elements contain additional information on airports in and adjacent to Riverside.

STATIONARY SOURCE NOISE

Industrial Noise

Industrial businesses can have a varying degree of impact on adjacent uses. Industrial operations often involve use of mechanical equipment, generators and vehicles that contribute to noise levels at industrial sites, particularly for outdoor activities. Many of Riverside's neighborhoods have homes in close proximity to industrial uses.

Title 7 of the Riverside Municipal Code establishes noise performance criteria to guard against exposure of residential and other noise-sensitive uses to loud industrial-related noise. The noise/land use compatibility criteria in Table N-1 (Characteristics of Noise) will be used in assessing siting of new industrial uses.

Construction Noise

Construction noise typically involves the loudest common urban noise events associated with building demolition, grading, construction, large diesel engines and truck deliveries and hauling. Construction activity, although temporary at any given location, can be substantially disruptive to adjacent uses during the construction period. Riverside Municipal Code Section 7.35.010(B)(5) regulates the allowable hours of construction activity to 7:00 A.M. to 7:00 P.M. on weekdays and 8:00 A.M. to 5:00 P.M. on Saturdays, with no construction activities allowed on Sunday or Federal holidays. In addition, the Municipal Code limits noise levels from construction activities to the maximum permitted exterior noise level for the affected land use.

Infrastructure improvements such as street widenings can also be a source of noise. Street improvement projects will incorporate the City's acoustical assessment procedure to minimize noise impacts.

Mechanical Equipment Noise

The motors, pumps and fans that cool and heat our buildings produce point-source noise that most directly affects adjacent land uses.

Frequently, this equipment includes components of pure tone noise from the rotational frequency of motors. Although noise levels are generally low from these sources, the fact that such sources may operate continuously and may include pure tones that make them audible at a substantial distance creates potential for conflict. The City's Zoning Code and Municipal Code provisions generally address these conflicts.

Portable Power Equipment

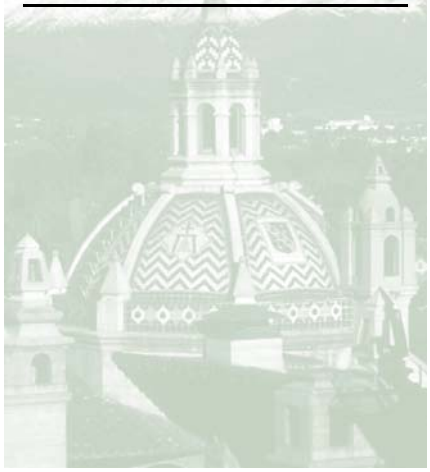
Leaf blowers, lawn mowers, portable generators, electric saws and drills and other similar equipment that people use to maintain their properties create frequent noise during daylight hours. Such disruptions to the ambient sound environment are ubiquitous in the modern city and can produce very high noise levels at the location of the work.

Amplified Sound

Amplified sound includes noise from personal or home audio equipment, automotive audio equipment, outdoor loudspeakers such as those used for paging and amplified sound at music or theatrical performances. Because this sound typically includes music or speech, it is potentially more detectable and more annoying than other sounds of the same noise level. Section 7.35.010 of the Municipal Code establishes limitations on time and magnitude of noise for these sources.

FUTURE NOISE CONDITIONS

Data, including a location map of measurement sites used to create the projected noise contours, can be found in the General Plan EIR.



The most significant noise sources in Riverside — roadways, freeways, railways and air facilities— will continue generating noise into the future. Figure N-5 (2025 Roadway Noise) identifies the projected noise contours for year 2025 largely attributable to roadway traffic; Figure N-6 (2025 Freeway Noise) identifies noise projected from freeway traffic. Projected noise from railroad activity is shown in Figure N-7 (2025 Railway Noise). Noise levels from these surface sources are expected to increase with increased traffic levels anticipated in the Planning Area by 2025.

Insert Figure N-5 - 2025 Roadway Noise

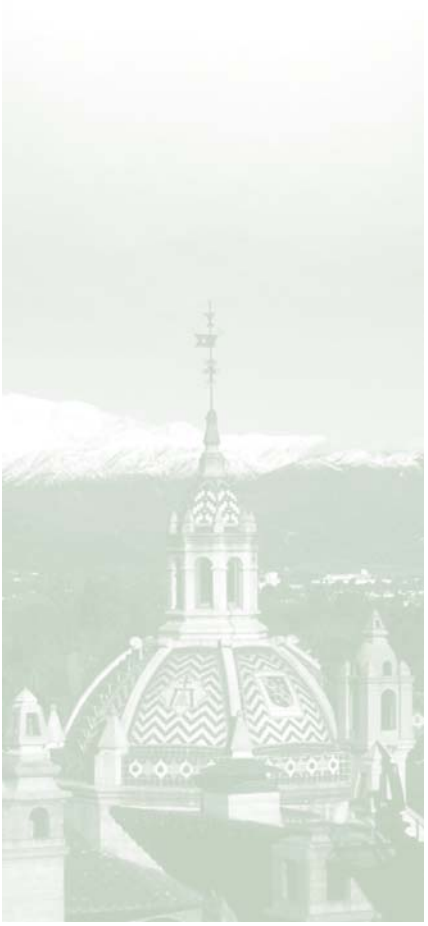


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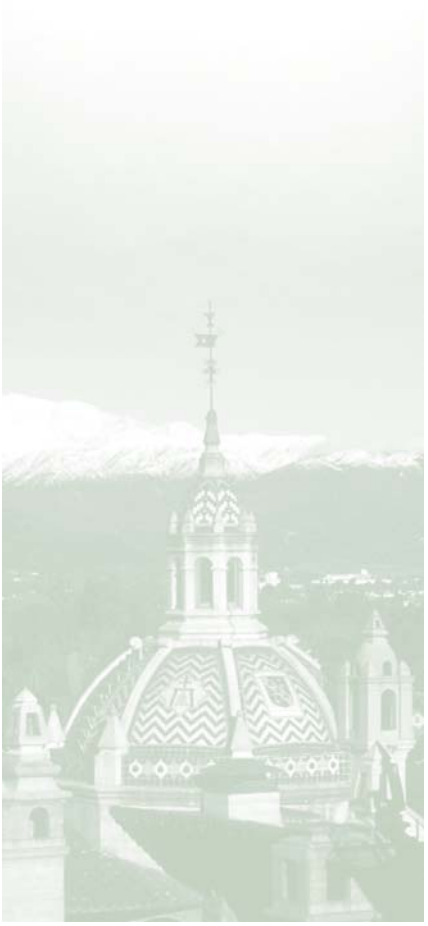
Figure N-6 - 2025 Freeway Noise



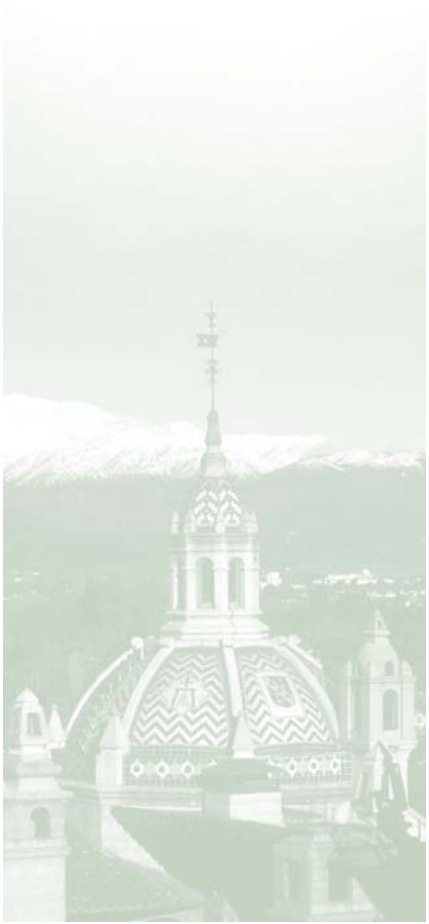


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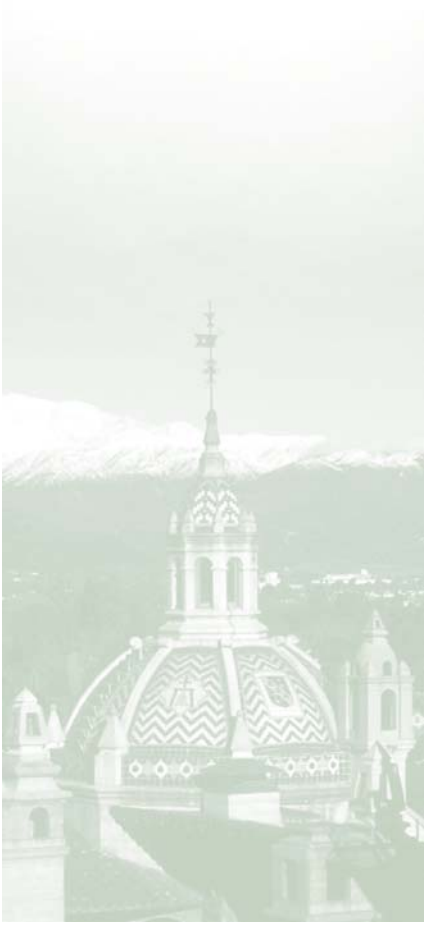
Figure N-7 - 2025 Railway Noise



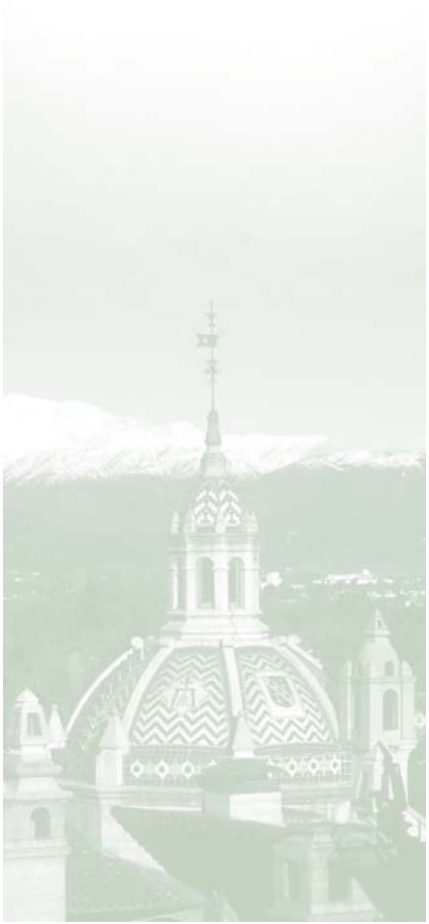


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Figure N-8 (2025 Riverside and Flabob Airport Noise) focuses on noise impacts projected for these small facilities by the Riverside County Airport Land Use Commission. Figure N-9 indicates future noise levels associated with March Air Reserve Base/March Inland Port as projected in a 1998 Air Installation Compatible Use Zone Study completed by the Department of the Air Force.

The Land Use Policy Map (Figure LU-9 in the Land Use and Urban Design Element) has been developed to avoid placing intensive new uses with the airport-influenced areas. These policies are carried out through congruent zoning regulations. Development controls include limiting development within areas subject to high noise levels and limiting the intensity and height of development within aircraft hazard zones. The Riverside County Airport Land Use Compatibility Plan (CLUP), proposed for adoption in 2005 by the Riverside County Airport Land Use Commission, proposes to designate zones of airport-influenced areas for every airport in Riverside County and proposes a series of policies and compatibility criteria to ensure that both aviation uses and surrounding areas may continue.

In 2004, March JPA initiated the March Joint Land Use Study (JLUS) for the joint use March Air Reserve Base/March Inland Port. Upon completion, the findings and recommendations of this study will be incorporated into the Riverside County Airport Land Use Compatibility Plan (CLUP).

The noise contours in Figures N-5 through N-9 assist in setting policies for establishing new land uses and appropriate mitigation for properties that will continue to be exposed to higher noise levels.

Riverside's primary goal with regard to community noise is to minimize the exposure of new residential development, schools, hospitals and similar noise-sensitive uses to excessive or unhealthy noise levels to the greatest extent possible. Toward this end, this Element establishes the noise/land use compatibility guidelines set forth in Figure N-10 (Noise/Land Use Noise Compatibility Criteria) for outdoor noise.

The compatibility guidelines recognize and respond to the many different noise environments in Riverside: the relative quiet within the greenbelt area, the sounds typical in suburban neighborhoods and the higher activity areas such as Downtown and within mixed-use districts. As a matter of policy, the City supports new residential development within already urbanized areas where ambient noise levels may be higher than those experienced in neighborhoods located on the urban periphery. This is in an effort to promote "smart growth," mixed use development, making more efficient use of land and resources.

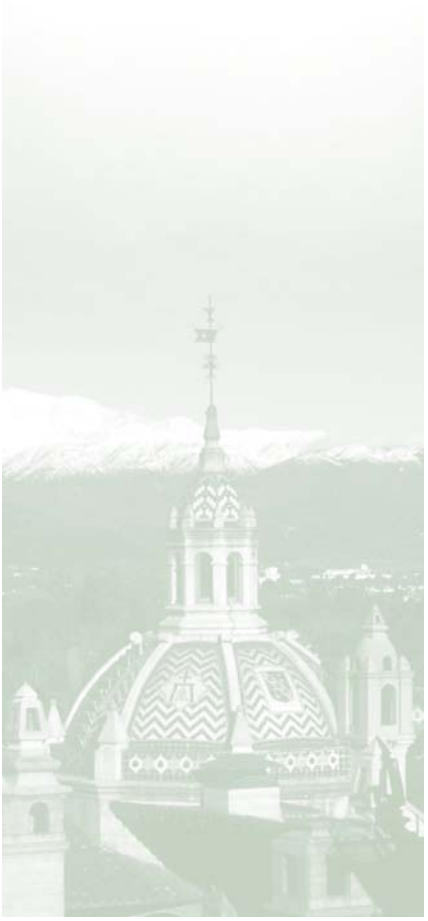

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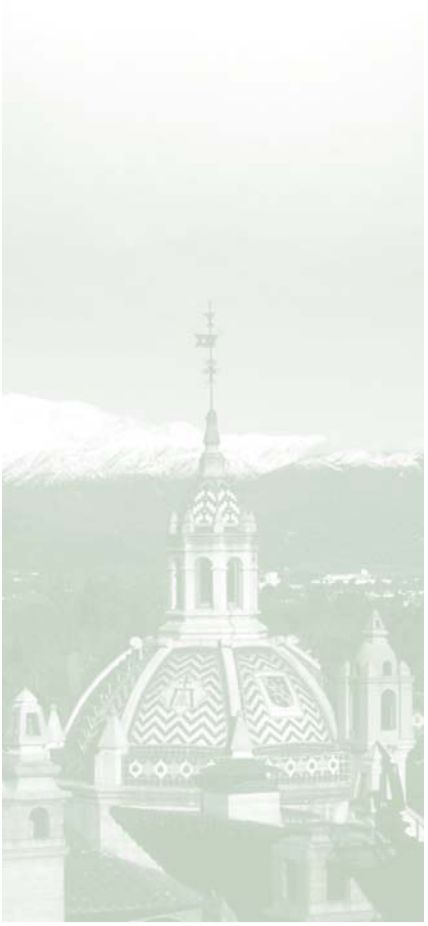
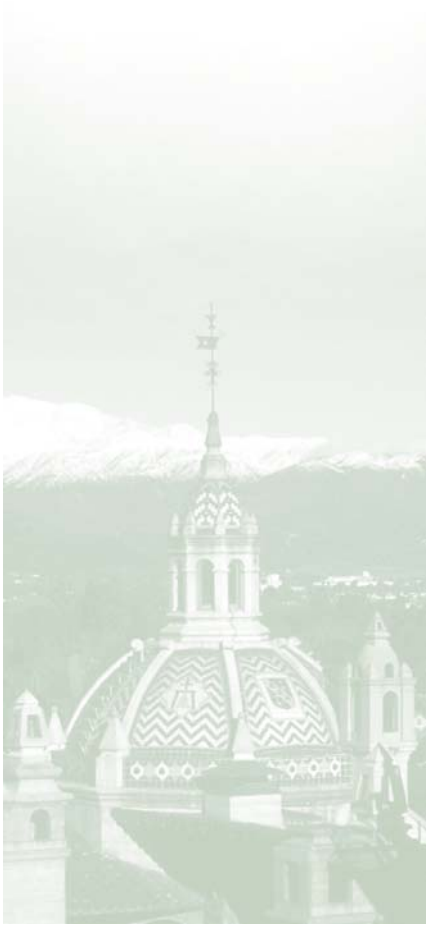
Figure N-8 - 2025 Riverside and Flabob Airport Noise





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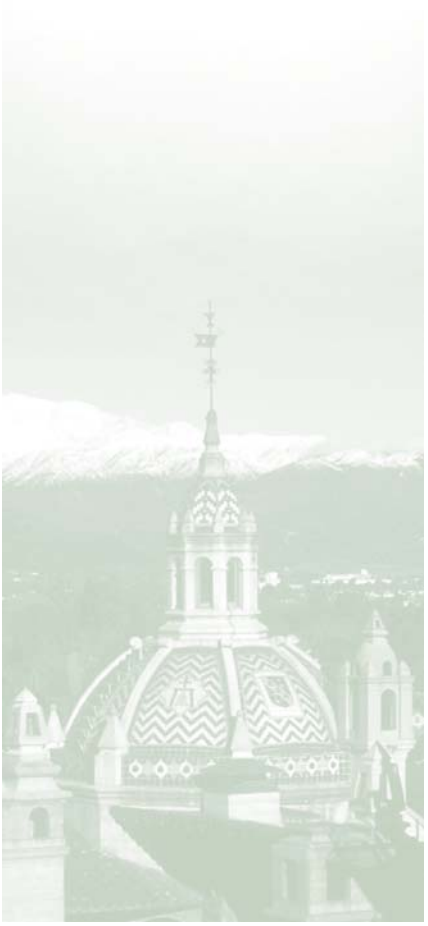
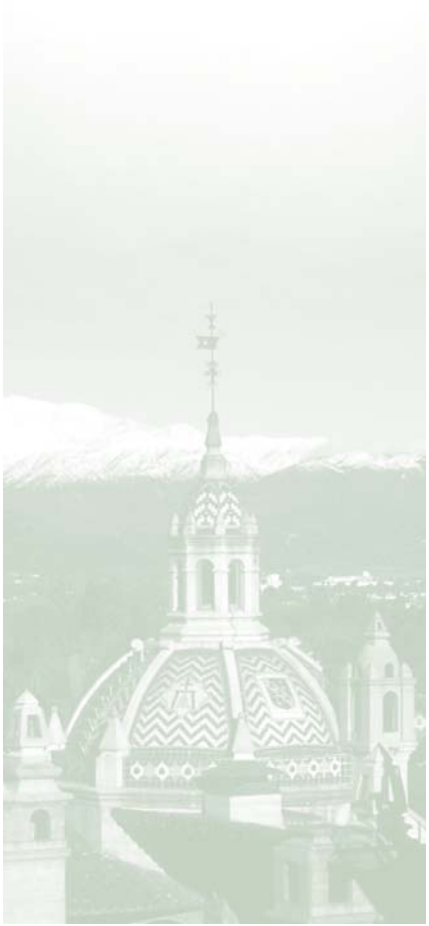
N-9 Future March ARB/MIP Noise





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Interior noise levels for new residential development, regardless of location within the Planning Area, will be required to comply with standards set forth in Title 24 of the State Health and Safety Code. New construction may need to incorporate special insulation, windows and sealants in order to ensure that interior noise levels meet Title 24 standards.

MINIMIZING NOISE IMPACTS

NOISE AND LAND USE PLANNING

Primary noise sources in the City will not go away. The City will utilize the noise/land use compatibility guidelines outlined in Figure N-10 (Noise/Land Use Compatibility Criteria) in making land use decisions. These compatibility guidelines show a range of noise standards for various land use categories. Depending on the ambient environment of a particular community, these basic guidelines may be tailored to reflect existing noise and land use characteristics. The matrix defines noise in terms of CNEL and expressed in dB that measure sound intensity. Noise levels occurring during nighttime hours are weighted more heavily than during the daytime. Additionally, the City provides levels of acceptable noise exposure based on the sensitivity of specific land uses (Municipal Code Section 7.25.010). The City will pursue proactive measures to limit additional exposure of sensitive uses and to address longstanding noise issues.

Land uses deemed the most noise sensitive include amphitheaters, concert halls, auditoriums and meeting halls. Many jurisdictions consider residential uses particularly noise sensitive because families and individuals expect to use time in the home for rest and relaxation; intrusive noise can interfere with such pursuits. Some variability in standards for noise sensitivity may apply to different densities of residential development, specifically infill and mixed use developments; single family uses are frequently considered the most sensitive.

Sensitive receptors must also be protected from excessive noise associated with commercial and industrial businesses and agricultural activities. Application and enforcement of the City Noise Control Code will continue to be the primary means of regulating and controlling so-called point-source noise. During the preliminary stages of the development process, potential noise impacts and appropriate mitigation will be identified.

Similarly, enforcement of the Noise Control Code will address nuisance noise such as loud animals or birds, loud audio equipment, domestic

power tools, vehicle repair and testing, powered motor vehicles and construction activities.

Objective N–1: Minimize noise levels from point sources throughout the community and, wherever possible, mitigate the effects of noise to provide a safe and healthful environment.

Policy N-1.1: Continue to enforce noise abatement and control measures particularly within residential neighborhoods.

Policy N-1.2: Require the inclusion of noise-reducing design features in development consistent with standards in Figure N-10 (Noise/Land Use Compatibility Criteria), Title 24 California Code of Regulations and Title 7 of the Municipal Code.

Policy N-1.3: Enforce the City of Riverside Noise Control Code to ensure that stationary noise and noise emanating from construction activities, private developments/residences and special events are minimized.

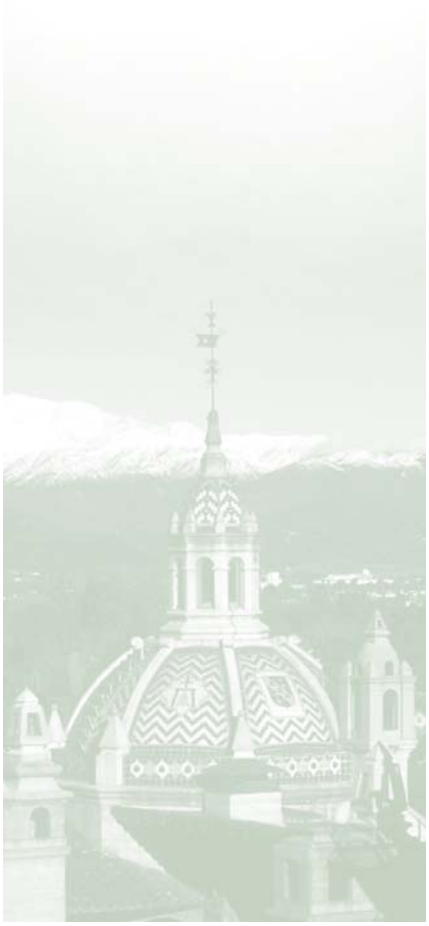
Policy N-1.4: Incorporate noise considerations into the site plan review process, particularly with regard to parking and loading areas, ingress/egress points and refuse collection areas.

Policy N-1-5: Avoid locating noise-sensitive land uses in existing and anticipated noise-impacted areas.

Policy N-1.6: Educate the public about City noise regulations.

Policy N-1.7: Evaluate noise impacts from roadway improvement projects by using the City's Acoustical Assessment Procedure.

Policy N-1.8: Continue to consider noise concerns in evaluating all proposed development decisions and roadway projects.



Objective N–2: Minimize the adverse effects of airport-related noise through proper land use planning.

Policy N-2.1: Ensure that new development can be made compatible with the noise environment by using

noise/land use compatibility standards and the airport noise contour maps as guides to future planning and development decisions.

Policy N-2.2: Avoid placing noise-sensitive land uses within the high noise impact areas for Riverside Municipal Airport and Flabob Airport.

Policy N-2.3: Support efforts of the Federal Aviation Administration and other responsible agencies to require the development of quieter aircraft.

Policy N-2.4: Work with the Federal Aviation Administration and neighboring airport authorities to minimize the noise impacts of air routes through residential neighborhoods within the City.

Policy N-2.5: Utilize the Airport Protection Overlay Zone, as appropriate, to advise landowners of special noise considerations associated with their development.

See the Land Use and Urban Design, Circulation and Community Mobility and Public Safety Elements for more information on Airports.

In particular review Objectives LU-20, LU-21, CCM-11 and PS-4.

Objective N–3: Ensure the viability of March Air Reserve Base/March Inland Port.

Policy N-3.1: Avoid placing noise-sensitive land uses within the noise contour impact areas for March Air Reserve Base/March Inland Port.

Policy N-3.2: Work with the Riverside County Airport Land Use Commission, March Joint Powers Authority and other airports in the vicinity of the City to develop noise/land use guidelines consistent with City land use plans.

Policy N-3.3: Carefully consider planned future operations of the March Air Reserve Base and March Inland Cargo Port in land use decisions for properties located within the airport-influenced area.

Policy N-3.4: Support the noise/land use policies for the area adjacent to the March Air Reserve Base/March Inland Port through the adoption of the March JLUS into the Riverside County Airport Land Use Compatibility Plan.

Refer to the Land Use and Urban Design Element for additional objectives and policies related to March Air Reserve Base and Inland Cargo Port.

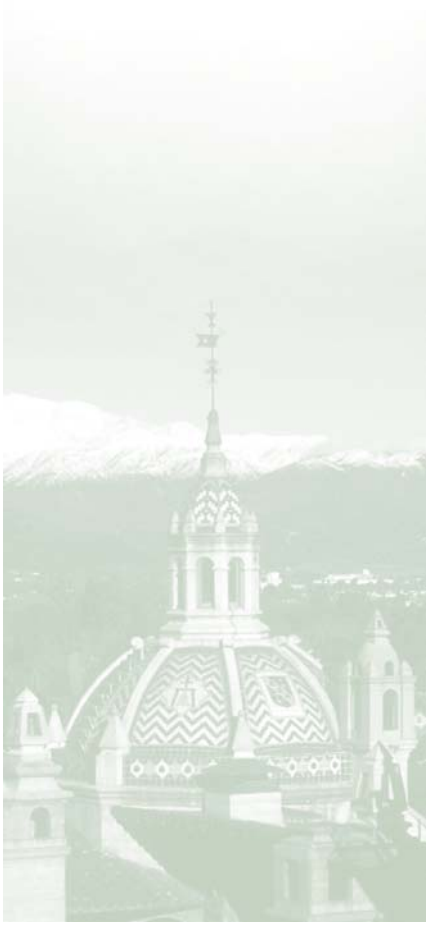
In particular review Objectives Lu-20 and LU-21.

ADDRESSING TRANSPORTATION NOISE

The most efficient and effective means of controlling noise from transportation systems is to reduce noise at the source. However, the City has no direct control over noise produced by trucks, cars and trains because State and Federal regulations preempt local laws. Given that the City cannot control this noise at the source, City noise programs focus on reducing the impact of transportation noise along freeways, arterial roadways and rail corridors.

Site planning, landscaping, topography and the design and construction of noise barriers are the most common and effective method of alleviating vehicular traffic and train noise impacts. Setbacks and buffers can also be used to achieve noise reduction.

Noise-attenuating barriers can and will be incorporated into new development projects to reduce noise exposure. The effectiveness of the barrier will depend upon: 1) the relative height and materials of the barrier; 2) the noise source; 3) the affected area; and 4) the horizontal distance between the barrier and the affected area.



Freeway noise associated with SR-91 has largely been addressed to greatest extent practicable with recent improvements. The SR-60/I-215 upgrade project includes elements to shield freeway noise, particularly along areas of the freeways adjoining residential areas. The City will continue to pursue mitigation with Caltrans for any remaining areas not addressed by freeway enhancement projects.

Mitigating rail noise represents one of the biggest challenges the City will continue to face. Eliminating all at-grade crossings for existing railways would significantly reduce noise impacts and solve road/rail traffic conflicts, but this solution involves costs beyond the collective resources of the City, Federal agencies and railroad owners/operators. Thus, City efforts will focus on minimizing noise associated with train horns, prioritizing grade separations and implementing noise reduction programs.

Objective N–4:	**Minimize ground transportation-related noise impacts.**
Policy N-4.1:	Ensure that noise impacts generated by vehicular sources are minimized through the use of noise reduction features (e.g., earthen berms, landscaped walls, lowered streets, improved technology).

Policy N-4.2: Investigate and pursue innovative approaches to reducing noise from railroad sources.

Policy N-4.3: Identify and aggressively pursue funding sources to provide grade separations and sound walls along train routes as noise reduction measures.

Policy N-4.4: Prioritize locations for implementing road/rail grade separations.

Policy N-4.5: Use speed limit controls on local streets as appropriate to minimize vehicle traffic noise.